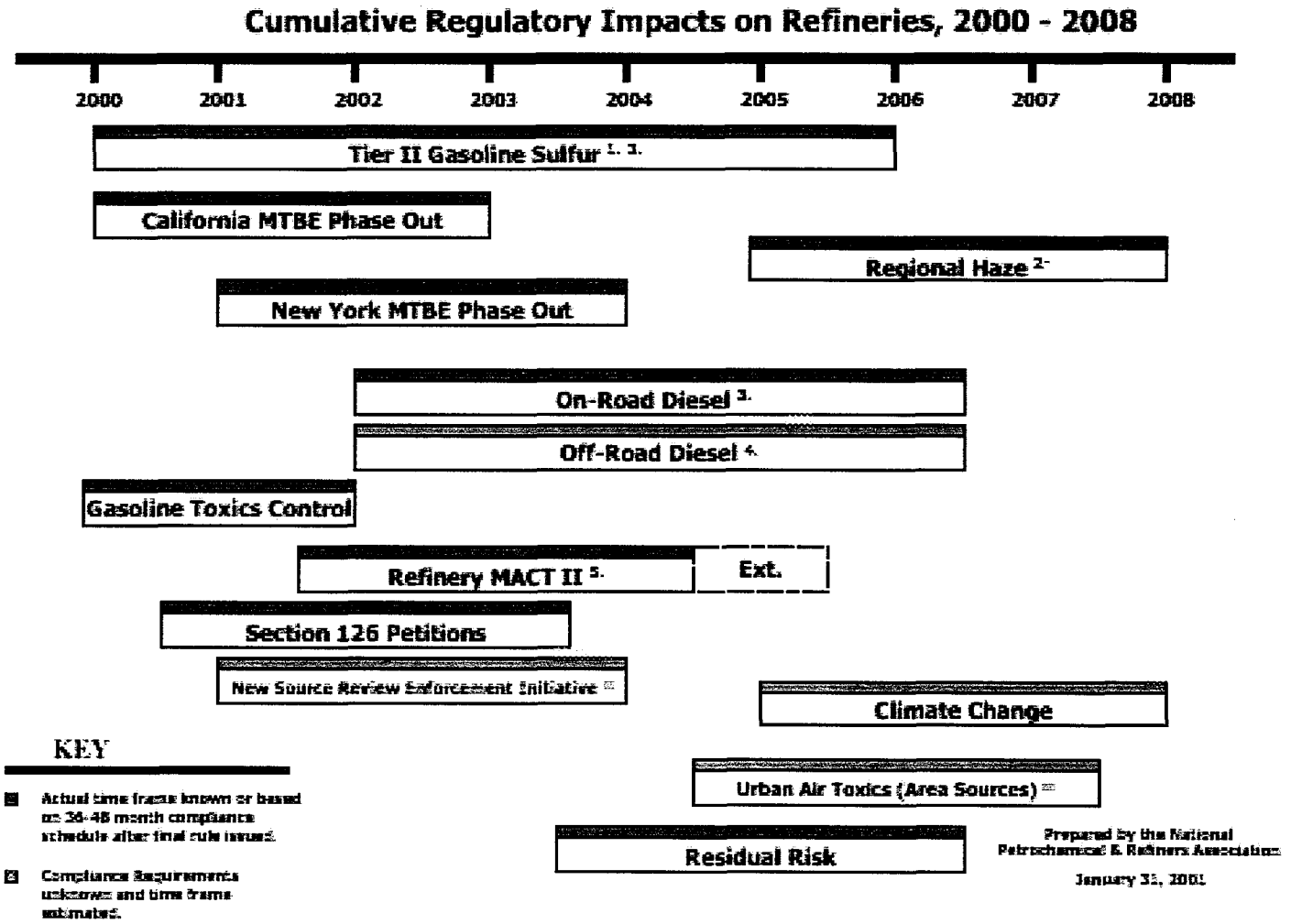
# Regulatory Avalanche



# API RECOMMENDATIONS TO CEQ ON REFINERY PERMITTING ISSUES (12/13/01)

- State and local permitting agencies should increase their resources and devote the training necessary to review and issue permits for refineries and terminals expeditiously. As stated in the preamble to the low sulfur gasoline rule, the EPA should provide resources to resolve permitting issues when they arise as expeditiously as possible. Sufficient resources should be provided for all permitting areas including hazardous waste and wastewater, to expedite needed permit changes.

- EPA must focus its resources on reviewing and approving state permitting programs and not get involved in actual project permitting. Many permit applications have been held up while local or state permitting authorities seek guidance or concurrence on permit terms from EPA regional offices.

- EPA's national permitting efforts, headed by Bill Harnett (EPA OAQPS), need to remain active in facilitating Tier 2/gasoline sulfur permitting.

- Environmental justice challenges add another layer onto the already complex permitting system. EPA should provide the resources to expeditiously process environmental justice challenges. State and local agencies should work to address EJ concerns during the permitting process.

- EPA should withdraw of revisit the BACT/LAER guidance since it does not achieve its objective of facilitating permits

- API recommends that EPA issue the Offset Guidance document to allow use of mobile source emission reductions as offsets

- API encourages EPA to complete efforts to characterize the emissions benefits of the Tier 2/gasoline sulfur rule.

- EPA should work to better integrate the activities of Title I and Title V.

- Permits for the production of clean fuels should be given special attention because of the importance of the new fuels and the regulatory deadlines companies must meet.

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July 19, 2001

**Via Courier Delivery and Email**

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Re: Comments on the New Source Review 90-Day Review and Report to the President. EPA Docket No. A-2001-19

Dear Ms. Daigle:

Thank you for the opportunity to meet with you and other members of the New Source Review (NSR) review team on June 28, 2001. As you requested, we are submitting written comments to follow up on our discussions at that meeting. The American Petroleum Institute (API) is pleased to provide these comments to assist the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy with the 90-Day Review and Report to the President on the NSR Program. API represents over 400 companies involved in all aspects of the oil and natural gas industry and thus has a large stake in meeting the energy needs of the public while protecting the environment. Our members have spent billions of dollars over the past decade to install air pollution controls and are fully supportive of clean air regulatory programs that both promote clean air and allow our industry the operational flexibility needed to respond to rapid changes in the marketplace.

The petroleum refining industry is a high technology industry that must be able to respond rapidly to changes in raw material availability, market demands and environmental requirements. Refiners are required by law to make adjustments to fuel specification from one season to another, produce fuels meeting multiple specifications in various regions of the country, and reconfigure to refine cleaner burning low sulfur diesel

and gasoline, all while being able to supply fuels to meet constantly changing customer demand. Our goals for a modified NSR program are to gain flexibility to meet all of these conditions, certainty that we are meeting regulatory requirements, and assurance that we are doing our part to achieve cleaner air. The NSR Program needs to get back to the basics of permitting and requiring appropriate pollution controls for new sources and major modifications to existing sources that result in significant emissions. API looks forward to working with the Agency to develop these most needed changes to the NSR program.

This cover letter summarizes our view of the current situation regarding refinery operations and their contribution to clean air issues, examples of problems the industry has encountered with NSR suggested solutions, and answers to some of the questions raised by the government in our June 28 meeting. Following are detailed comments with the information you requested.

## Emissions Have Gone Down As Refinery Capacity Has Increased

During the 1990s, the number of refineries in the U.S. decreased from 194 to 155. However, in that same timeframe, demand for petroleum products increased 16%. To continue to keep up with consumer demand, refinery capacity grew from 15.5 to 16.5 million barrels a day in the 1990s and refinery capacity utilization, which had averaged above 85% in the 1980s, was often at or above 95%. This compares to an average utilization rate in other industries of 82%. For the first 5 months of 2001, utilization rates were in the range of 97%. The industry is now in a position where there is no excess capacity and refineries are operating at or near peak levels.

The U.S. refining industry is proud of the fact that even with the increased capacity and utilization rates, its overall emissions of nitrogen oxides (NOx), sulfur dioxides ($SO_2$), volatile organic compounds (VOCs), and particulate matter ($PM_{10}$) have decreased 22.5% over the past decade and 75% since 1980.[1] Refining today represents only about 3% of the total $NO_x$ and $SO_2$ emissions for all stationary sources.[2] In the late 1990's the refining industry's portion of VOC emissions dropped by more than 30%[3], again demonstrating our decreasing environmental impact at a time our output was increasing.

Even though our industry has demonstrated the ability to meet the increasing demand for energy while reducing emissions, the refining industry is being forced to seek NSR permits more frequently than ever before. NSR permits are now being required for the completion of projects that make refineries more efficient, lower emissions and provide capacity increases needed to keep up with increasing demand. This includes projects that result in no increases in emissions or even those that actually decrease emissions. This change is a direct result of EPA's reinterpretation in the applicability of the NSR provisions of the Clean Air Act (CAA). U.S. refineries are unlikely to be able to

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[1] *National Air Pollutant Emissions Trends*, 1900-1998; U.S. EPA; March 2000.
[2] 1999 data for SIC 2911 from the U.S. EPA AIRS database
[3] 1996 SIC 2911 share of VOCs 11%, 1999 share down to 7.6% from the U.S. EPA AIRS database

continue to make the needed capacity increases with efficiency, unless the NSR provisions are implemented in conformance with the intent of the CAA.

## Problems: Unnecessary Application of New Source Review Discourages Normal Maintenance, Technology Innovation and Capacity Expansion

As the specific examples provided in our detailed comments more fully demonstrate, the NSR program, as currently implemented, discourages normal maintenance, technology innovation and capacity expansion by:

- Limiting, delaying or stopping equipment replacements or upgrades and maintenance practices that are needed to ensure safe, reliable and efficient operation and, at the same time, are capable of increasing capacity with little or no impact on emissions, and

- Limiting or restricting project modifications and creating a climate of uncertainty due to EPA's reinterpretation of NSR requirements. Sometimes these interpretations contradict determinations made by state and local authorities with delegated air-permitting authority, leading to permitting delays and further uncertainty.

To require NSR permitting review for numerous normal maintenance activities or minor realignments of operations reduces the ability of our members' facilities to supply fuels to consumers, accomplish needed capacity expansion in a timely manner, and make changes that reduce emissions. It has created so much uncertainty that plant managers are reluctant to make any changes at all. As will be explained below, if some of these changes are not made during planned downtime, they cannot be made while the affected unit is operating. Requiring NSR permitting review for almost all maintenance activities also forces States to focus their permit review resources on changes that are insignificant with respect to emissions. The complexity of the rules governing NSR also has caused permitting authorities to delay making basic NSR permitting decisions until they can seek approval from EPA regions.

## Solutions That Will Improve Air Quality While Enabling Refineries to Make Changes Needed for Energy Efficiency and Clean Fuel Supplies

At our June 28 meeting, we discussed our proposed solutions to the NSR program as applied to existing facilities. Our solutions are aimed at refocusing the NSR program on its original intent as expressed in the CAA -- improving air quality through a permit review of new sources and major modifications to existing facilities. (Please refer to Attachment III, New Source Review Reform – Solutions, for more detail.)

1. Clarify Regulatory Applicability Provisions in the Base Program

    a. Define the routine maintenance, repair and replacement exemption. Normal and customary maintenance, repair and replacement work,

regardless of frequency, should not be subject to NSR permit requirements. The Report produced by the 90-day review should announce the Agency's intent to propose a rule clarifying this aspect. The review should also announce the immediate withdrawal of the Detroit Edison applicability decision issued in 2000.

b. Use a potential-to-potential emissions applicability test. The Report produced by the 90-day review should announce the Agency's intent to propose an emissions test based on comparing the pre-project potential emissions rate to the post-project potential emissions rate.

c. Apply a practical definition of project aggregation. NSR review should be based on a practical definition and implementation of project aggregation, where projects clearly unrelated in function, time or effect are not considered as one project. The Report produced by the 90-day review should announce the Agency's intent to propose a rule clarifying this aspect.

d. Provide incentives for technological innovation. An NSR program must recognize and promote technological innovations that lead to better utilization of raw materials and decreased emissions. Technological innovation in the refining industry has allowed for continuous improvement in the efficiency of refinery facilities. The Report produced by the 90-day review should announce the Agency's intent to propose a rule that promotes technological innovations that lead to better utilization of raw materials and decreased emissions by:

- Establishing an exemption from NSR review for energy efficiency improvements that reduce the consumption of fuels or raw materials as well as reducing air pollution. Specifically, energy projects that reduce the consumption of fuels or raw materials in the combustion or manufacturing process should be exempted from NSR review. To implement this exemption, EPA should develop clear measures of energy efficiency.

- Expanding the exemption from NSR for pollution control/switch to clean fuels to other industries beyond utilities: An expanded exemption for pollution control projects should include any project that results in a net reduction of emissions or that results in a source switching to cleaner burning fuels. The exemption should weigh the total reduction in emissions of various pollutants against any potential increases.

2. Institute Flexible Mechanisms as Voluntary Alternatives to the NSR Base Program

In addition to essential reforms to the base NSR program, API also encourages EPA to work with industry to evaluate and develop voluntary flexible alternatives to the base NSR program. These flexible alternative mechanisms should protect the environment while providing regulatory streamlining in order to facilitate the rapid changes necessary to meet clean fuel requirements at petroleum refineries. The Report produced by the 90-day review should announce the Agency's intent to evaluate and develop flexible alternatives such as plant-wide applicability limits (PALs) and market based alternatives.

3. Develop a Process for Prompt, Reasonable Permit Review

API supports President Bush's Executive Order 13212, "Actions to Expedite Energy-Related Projects." The principal thrust of the directive is for all executive agencies "to expedite projects that will increase the production, transmission, or conservation of energy." More specifically, the President directed "[f]or energy related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections." API stands ready to work with the Agency and other stakeholders to achieve this result.

## Responses to Questions Posed by the Government in June 28 Meeting

With regard to plant-wide applicability limits (PALs), the question was asked in the June 28 meeting if API members could support a declining cap, such as the one agreed to in the Marathon Ashland Petroleum consent decree, in PALs generally. PALs are set on a case-by-case basis in differing circumstances. As indicated above, the refining industry continues to increase product capacity while lowering overall emissions. When an individual PAL is established, it might include a declining emissions baseline due to already planned emission reductions; however, a declining baseline should not be considered uniformly appropriate or applicable. The purpose of a PAL is to allow a plant to operate efficiently and optimally within its permit limits, without having to undergo the time-consuming process of determining NSR applicability for every change in operations or physical change to the plant. A reasonable operating margin is needed for controlled units. An important detail of PAL implementation is establishing the baseline emissions. For a unit without a permit or other regulatory emissions limit, the proposed contribution to the baseline for that unit might be lower than that unit's current actual emissions; this can be set on a case-by-case basis.

As API noted in its comments on the 1996 NSR proposed rule, PAL limits should only be lowered when a new state or federal rule is developed that requires lowering of emissions at the same source covered by a PAL (in which case the source with the PAL should be able to achieve required reductions in whatever manner it deems appropriate) and when monitoring or modeling clearly shows the source with the PAL to be the cause of a violation of a National Ambient Air Quality Standard (NAAQS) or PSD increment.

At the June 28 meeting, we also were asked for our views on the "clean unit" proposal in the 1996 NPRM. As API stated in its 1996 comments, we support the clean unit concept as a sound improvement to the existing rules, with some further improvements. First, equipment with MACT controls for Volatile Hazardous Air Pollutants should be presumptively considered clean units, once installed. Further, the installation of MACT controls should be explicitly listed as Pollution Control Projects and thereby exempt from NSR, on both existing and new units. Finally, controls required by local and state agencies to reduce emissions of volatile organic compounds should be explicitly exempted in the rule.

**Detailed Comments**

Our enclosed detailed comments address the following:

I. Comments on EPA's NSR Background Paper;
II. Examples of NSR permitting review impacts on refineries that discourage or delay improved energy efficiency, increased clean fuels and energy supplies, or pollution prevention efforts;
III. Proposed solutions for fixing the NSR program, including changes needed to the base program, as well as some flexible and/or market-based alternatives to the current program; and
IV. Discussion and list of other regulations that reduce air pollution from refineries, in addition to NSR.

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Supplying clean fuels to the American consumer in an energy efficient manner and in compliance with Clean Air Act requirements is very important to our members. We believe that the National Energy Plan has raised genuine issues with regard to the ability of the refining industry to meet energy needs under the current NSR program. We are most interested in working with you and other stakeholders to achieve needed improvements to the program that will achieve the dual goals of continuing to improve air quality and enabling refineries to supply the clean fuels at cost-effective prices, as desired by the American consumer.

If you have any questions regarding our comments, please contact me at the number above, or Betty Cox, at (202) 682-8250.

Sincerely,

[Signed by Nancy W. Newkirk]

Nancy W. Newkirk

Enclosure: Detailed Comments

cc: The Honorable Spencer Abraham, Secretary, U.S. Dept. of Energy
The Honorable Gale A. Norton, Secretary, U.S. Dept. of the Interior

Rich Biondi, EPA/OECA
Joshua Bolton, Asst. to the President & Dep. Chief of Staff for Policy, EOP
John Bridgeland, Dep. Asst. to the President for Domestic Policy, EOP
Doug Carter, DOE
James L. Connaughton, Chair, CEQ
The Honorable Mitchell E. Daniels, Jr., Director, OMB
Larissa Dobriansky, Office of General Counsel, DOE
Alan Eckert, EPA/OGC
Amy Farrell, OMB
Arthur Frass, OIRA, OMB
Diane Furgoth-Roth, CEA
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## Detailed Comments

## I. NSR 90-Day Review Background Paper

### A. Length of Time for Permit Issuance

The NSR 90-Day Review Background Paper (Background Paper) states,

> "Based on an EPA review of about 900 permits since 1997, the average time needed to obtain a major NSR permit or PSD permit, across all industries, is approximately 7 months from receipt of the complete permit application." (p.7)

API believes it is important to clarify this statement so that it is not misleading by virtue of the fact that it does not account for the complexity of the entire permitting process. It fails to account for the time expended by regulated facilities to gather the information needed to apply for a permit, as well as the time needed to deal with appeals and challenges. While the above statement applies to all industries, the experience of the refining industry is that the NSR/PSD permitting process is far longer than discussed in the Background Paper. In June 2000, the National Petroleum Council issued a report (NPC Report), at the request of the Secretary of Energy, entitled "U.S. Petroleum Refining: Assuring the Adequacy and Affordability of Cleaner Fuels." (A copy of the NPC Study is attached for the docket.) The NPC Report outlines the typical permitting timeline as follows:

- Development of permit application: 3 to 6 months
- State or local agency review for administrative and technical completeness: 1 to 3 months
- Development of draft permit and review and negotiation with refiner and state or local agency: 3 to 12 months (including agency review, negotiation of terms, and public notice and comment)
- Appeals and challenges, including environmental justice activities: additional time since refiners will want certainty they can proceed with construction before they begin.

Obviously, at best, the current process will take at least 7 months and may take 22 months, without appeals and challenges.

However, the NPC Report also states that future permitting activities very likely will be more complicated as the permit process becomes more difficult and contentious, including possible environmental justice claims that need to be addressed. In addition, a large number of refineries will need to obtain NSR permits to make the modifications necessary in the next several years to comply with the new low sulfur gasoline and diesel fuel requirements recently adopted by EPA. Also, if the oxygenate mandate for fuels is eliminated, as recommended by the EPA Blue Ribbon Panel on Oxygenates in Gasoline,

other refinery modifications may be needed to phase out the use of methyl tertiary butyl ether (MTBE).

The NPC Report concludes that obtaining permits is the most critical factor impacting compliance with new cleaner fuel requirements.

Recognizing the increased number of permits required and the workload this will place on permitting agencies, the NPC Report recommends that state and local permitting agencies increase their resources to process permits expeditiously. In addition, API notes that EPA will need to work more closely with the state and local permitting agencies if the permits are to be processed in a timely manner. Many permit applications have been held up while local or state permitting authorities seek guidance or concurrence on permit terms from EPA regional offices. If refineries and terminals cannot obtain permits in time to complete construction prior to regulatory deadlines, local supply disruptions are very likely.

## B. Factors Affecting Investment in Refinery Capacity

Section III, Part 2, of the Background Paper discusses the factors affecting investment in new refining capacity. The Background Paper states there are three primary considerations in project investment decisions: strategic, siting, and permitting.

API believes that capacity expansion decisions are much more complicated than conveyed in the Background Paper. With essentially no new refinery construction (the last major refinery built in the U.S. was completed over 20 years ago), growth in capacity at existing refineries has more than offset the capacity lost through refinery closures—particularly in the later part of the last decade, with the result that total refinery capacity grew from 15.5 to 16.5 million barrels per day in the 1990s. Further U.S. refinery expansion will be needed to meet continued product demand growth. Increased capacity will also be needed to offset the production loss resulting from the more stringent product quality requirements, as well as possible additional refinery closures. (For example, Farmland Industries' Coffeyville refinery (95,000 b/d) is for sale and the Premcor Blue Island refinery (80,000 b/d) closed in early 2001 – both companies cited the expense of clean-fuels regulations as deciding factors).

While there is growing recognition that refinery capacity expansion is needed to continue to meet consumer demand for petroleum products, there are a number of elements for refiners to consider when evaluating capacity expansion projects. Such elements include, but are not limited to: certainty regarding the ability to obtain needed permits; estimated future product demand; rate of return on the projects given increased environmental compliance costs; tax depreciation schedules; refinery viability in current market given changing fuel specifications; and intangibles, such as public opinion.

The NPC Report provides a thorough analysis of the historical and future viability of the U.S. refining industry. In addition, the NPC Report provides findings and recommendations to help ensure that the refining industry can continue to provide a

reliable supply of petroleum products to the U.S. consumer. The EPA should review the NPC Report and include its relevant recommendations and findings in the Background Paper.

### C. Significance of Environmental Compliance Costs to Refinery Expansion Investment Decisions

The Background Report states,

> "[a] minor factor affecting the cost side of the investment decision is the cost of compliance with environmental regulations." (p. 32)

API strongly disagrees. API believes that environmental compliance costs are a major factor impacting the decision to invest in capacity expansion. From 1990 to 1999, the refining industry spent *$46.9 Billion* to bring refineries into compliance with various environmental regulations. (API U.S. Petroleum Industry's Environmental Expenditures 1990-1999) This represents a major expenditure by any standard. The result is that much of the available investment capital has been focused on environmental compliance rather than on expansion projects to increase capacity needed to keep up with the growth in petroleum product demand.

### D. Trends in Capacity and Utilization (Section 3 Background Report)

To expand the discussion of trends in capacity in the Background Paper, API believes it would be helpful to include the impact of industry consolidation on capacity concentration as part of Section 3 of the Background Paper. According to The Oil and Gas Journal (March 19, 2001, p. 57), twenty refiners accounted for 75.2% of the crude distillation capacity at the end of 1990, as compared to 91.5% at the end of 2000.

During the 1990s, the number of refineries in the U.S. decreased from 194 to 155. However, in that same timeframe, demand for petroleum products increased 16%. To continue to keep up with consumer demand, refinery capacity grew from 15.5 to 16.5 million barrels per day in the 1990s and refinery capacity utilization, which had averaged above 85% in the 1980s, was often at or above 95%. This compares to an average utilization rate in other industries of 82 percent. For the first 5 months of 2001, utilization rates were in the range of 97%. The industry is now in a position where there is no excess capacity and the refineries are operating at their peaks.

The very high capacity utilization rate of U.S. refineries has already reached the point where the potential for supply interruptions and consumer hardship is of concern, since, with no excess capacity, a relatively minor incident may quickly cause a supply disruption and potential price impacts. Last summer's sharp gasoline price hikes in the Midwest, when refinery operating difficulties combined with pipeline and other problems to cause temporary shortages, are a case in point.

## E. Causes of Decrease in Refinery Capacity in Early 1990s

The Background Paper states,

> "[t] he increase in closures and the temporary fall in capacity in the early 1990s were due to steadily decreasing prices, worldwide recession, and the resulting fall in demand." (p. 34)

API believes that another major factor that needs to be mentioned is the cost of environmental compliance. Between 1990 and 1995 the refining industry spent an *average of $5 billion a year on environmental compliance*, primarily as a result of the 1990 Clean Air Act Amendments. (API U.S. Petroleum Industry's Environmental Expenditures 1990-1999) This certainly would have been a factor contributing to the increased refinery closures in the early 1990s.

## F. Refinery Capacity Increase in Non-Attainment as Compared to Attainment Areas

The Background Paper states,

> "Figure 18 shows capacity for the 149 refineries divided between those located in attainment and non-attainment regions. Capacity is higher in non-attainment areas, as refineries tend to be clustered in high-population, industrialized areas with poor air quality. However, the rate of incremental growth is approximately the same whether in attainment or non-attainment areas, indicating that this is not a determining factor in investment in new capacity." (p. 38)

API believes that EPA has misinterpreted the U.S. Department of Energy, Energy Information Administration's chart used in Figure 18 and, therefore, has reached inaccurate conclusions. Figure 18 shows net production increases for both attainment and non-attainment areas of about 1.7 million barrels per calendar day. That equates to a 19% increase for non-attainment areas and about a 43% increase in attainment areas, or about 2.25 times greater than for capacity expansion in non-attainment areas. Thus, EPA's conclusion that the incremental growth for both areas is approximately the same is inaccurate and should be revised to indicate the actual situation.

## G. Data on Refinery Profitability (Section 5 Background Paper)

API believes Section 5 should be expanded to show the real financial performance of the refining industry. According to the NPC Report, after the end of price controls, U.S. refining operating costs were gradually reduced as the industry became more efficient and competitive. Gross margins also declined at about the same rate. Contrary to the statement in the Background Paper, the overall effect across the 1981-1998 timeframe was relatively stable, with net margins averaging about $1 per barrel ($1999). In essence, the net operating costs savings were passed along to the marketplace.

Return on capital employed, which is the net income of a business segment divided by the capital employed in that segment, is a common statistic used to measure the financial performance of the petroleum industry. From 1981-1998, refining and marketing return on capital employed averaged 5% compared to 7% for total industry. This is about the same return one could get in a passbook savings account, but with significantly greater risk.

## H. NSR Impacts on Capacity Additions (Section 6 Background Report)

The Background Paper needs to recognize the impact of regulatory uncertainty on the evaluation of a capacity expansion project. EPA, the states and the regulated refinery community seem to agree that industry plant managers are currently extremely unsure of what triggers NSR review. This climate of uncertainty is not good public policy and does not produce good investment decisions leading to expanded capacity, environmentally beneficial plant upgrades and a reliable supply of petroleum products. The combination of regulations that require refiners to reformulate fuels and regulations that address refinery air emissions plus other environmental requirements, make the petroleum refining industry one of the most heavily regulated industries in the U.S. (See Part IV of these Detailed Comments.) Refineries are subject to over 125 federal environmental regulations, at least 50 of which directly require air emissions controls. The multitude of regulations must be coordinated to ensure certainty and predictability so as to allow refiners to make sound investment decisions.

Additionally, EPA guidance documents often change or revise regulatory requirements significantly after rules are finalized. For example, there are over 4000 pages of guidance for the NSR/PSD regulations alone. When these guidance documents are used in subsequent enforcement actions, the result is an operating and investment environment where there is a great deal of uncertainty related to the scope, timing, requirements and interpretations of the plethora of regulations. This situation makes the planning and execution of new refinery expansion projects very difficult, burdensome and exceedingly costly.

## II. Examples of NSR Impacts on Refineries that Discourage or Delay Improved Energy Efficiency, Increased Clean Fuels and Energy Supplies, or Pollution Prevention Efforts

During the 1990s, the number of refineries in the U.S. decreased from 194 to 155, while demand for petroleum products increased 16%. To keep up with consumer demand, refinery capacity grew from 15.5 to 16.5 million barrels a day and refinery capacity utilization, which had averaged above 85% in the 1980s, was often at or above 95% in the 1990s. This compares to an average utilization rate in other industries of 82%. For the first 5 months of 2001, utilization rates were in the range of 97%. The industry is now in a position where there is no excess capacity and refineries are operating at their peaks.

The U.S. refining industry is proud of the fact that even with increased capacity and utilization rates, EPA data shows that overall refinery emissions of nitrogen oxides ($NO_x$), sulfur dioxides ($SO_2$), volatile organic compounds (VOCs), and particulate matter ($PM_{10}$) have decreased 22.5% over the past decade and 75% since 1980.[4] Even though our industry has demonstrated the ability to meet the increasing demand for energy while reducing emissions, the refining industry has been forced to seek NSR and PSD permits more frequently than ever before. Permits are now being required for projects that make refineries more efficient, lower emissions and provide capacity increases needed to keep up with increasing demand. This includes projects that result in no increases in emissions or even those that actually decrease emissions. U.S. refineries are unlikely to be able to continue making needed capacity increases at a similar pace unless the NSR provisions are implemented in a balanced manner that is consistent with the Clean Air Act.

API members have provided the examples below that serve to point out some of the difficulties they have encountered with the current NSR program. We would like to see the program improved so that it focuses on changes and modifications at refineries that increase emissions by a significant amount, as intended by Congress. API's members support protecting the environment and achieving cleaner air, as well as the original goals of the NSR program. As recognized in the Report to the President on National Energy Policy, the NSR program, as currently implemented, slows innovation and refinery capacity expansion when triggered by changes with no significant negative impact on emissions.

### Unnecessary NSR Reviews Negatively Impact Refinery Energy Efficiency and Increased Fuel Supplies

#### Example #1 – Impact on Routine Equipment Replacement Decision

Problem Description:

The current reinterpretation of NSR regulations may prevent increased production efficiencies enabled through routine maintenance, repair and replacement (RMRR) of

[4] *National Air Pollutant Emission Trends, 1900-1998,* U.S. Environmental Protection Agency, March 2000.

worn out equipment. In this example, a routine equipment replacement may improve gasoline production by 1,000 barrels per day with only minor increased actual emissions. Unfortunately, the NSR reinterpretation redefines the definition of "routine" so narrowly that it excludes virtually every act of maintenance or replacement. Under the NSR RMRR reinterpretation, a decision may be made to replace worn out equipment with less technically capable parts in order not to trigger delays and expenses associated with the NSR permitting process.

For example, a gasoline production unit is down for maintenance just prior to the summer gasoline season. Old feed nozzles can be replaced with new generation nozzles that allow the refinery to produce gasoline more efficiently and increase production by 1,000 bbls/day to meet summer demands, without increasing oil inputs to the unit.

Over time EPA has narrowed its interpretation of the RMRR exemption. Currently, EPA would say the refiner is subject to NSR, since the replacement is infrequent, high cost and increases yield. EPA would require the refiner to compare past actual emissions before the nozzle replacement to potential emissions, which are 5% higher than actual emissions. This significantly increases the calculated emissions and significantly misstates the actual emissions increase from the nozzle replacement, i.e., creates a "fabricated" emissions increase. The "fabricated" emissions increase is large enough to trigger the NSR PSD permitting threshold.

Result:

The refiner will need to either generate emission offsets, or obtain an NSR permit and install additional emission controls. Project cost is significantly increased to address NSR requirements and offset the purported emissions increase. Also, project installation would be significantly delayed 6-18 months since NSR permitting takes much longer. Refiner must proceed with some nozzles replacement or shut down. Costs of doing traditional RMRR has increased substantially and will be delayed by the NSR process. Refiner may well decide to replace nozzles with old generation type, foregoing the gasoline production increase.

Energy Impact:

Less efficient technology used for replacement; lost opportunity for increased gasoline production

**Example #2 – Refinery Modification to Increase Gasoline Production**

Problem Description:

In 1998, a refiner began working on a 200,000 gallon per day expansion of its fluidized catalytic cracking unit (FCCU). Most of this expansion would be in increased gasoline blending components. An advanced technology-scrubbing device had been installed on this FCCU in 1994. The permit limits established in 1994 were based on vendor guarantees since the technology was not used in the United States. Subsequent testing indicated that the control device performed adequately. The unit, as of the 1994

installation was equipped with continuous emission monitors to measure $NO_x$, $SO_x$ and CO.

A permit for the expansion indicated that the increase in emissions based on past actual to future potential would be significant even though the actual increase in emissions, based on past actual to future actual, were not significant. However, reductions in permitted values resulted in the PSD calculated emission increases being considered significant.

A PSD draft permit was submitted to the state permitting agency in early 1999. Through discussions with the state permitting agency, the netting analysis was modified and updated. A modeling protocol was submitted and based on preliminary analysis, other changes were proposed in the refinery including reducing $NO_x$ emissions from other sources and changing stack locations and heights. As the permit review lengthened, the analysis was changed to reflect changes in the contemporaneous period. The state permitting agency has requested additional information on the BACT analysis.

Result:

In July 2001, because of concerns about aggregation with upcoming clean fuels projects, and that, even with approval, the modifications could no longer be accomplished during the 2001 turnaround, the application was withdrawn. Since turnarounds on the FCCU occur only once every four years, this project is now rescheduled to be coordinated with the clean fuels project down time. The PSD and non-attainment NSR analysis will reflect that it is part of the clean fuels project.

The difficulties in determining debottlenecking and aggregation issues have essentially resulted in a long delay of a project that could have put more gasoline into the marketplace during the summers of 2001, 2002 and 2003. Since the actual emission increases would have been negligible, there was no benefit to the environment associated with delaying this project.

Energy Impact:

Possible increased gasoline production of 200,000 gallons per day delayed indefinitely.

**Example #3 – Emissions Test Results In Automatic Triggering of PSD; Limiting Gasoline Production**

Problem Description:

Engineering would like to make changes to the FCCU riser design to allow better catalyst-crude mixing which would result in more gasoline being produced from the FCCU. This would be a physical change under PSD and, while it would not increase emissions at the FCCU, it would likely increase emissions from the gasoline loading dock and would lower emissions from diesel loading. Analysis has not yet been done to show if increase would be significant, i.e. > 40 tons/yr; however, using EPA's reported view

that actual emissions must be compared to potential to emit, the project would trigger PSD since the facility is under the permit cap limit by more than 40 tons/yr. The project, if completed, would not cause the facility to exceed its state permit facility cap for VOC, $NO_x$, $SO_x$ or any other pollutant.

Result:

Applying the "actual-to-potential" emission test automatically triggers NSR/PSD review for any changes regardless of the actual emissions impacts and discourages changes to increase gasoline production.

Energy Impact:

Lost opportunity to increase gasoline production capability.

**Example #4 – FCCU Modification to Increase Gasoline Production**

Problem Description:

A FCCU converts heavier, less valuable (to making gasoline) petroleum components into more useable and valuable gasoline and other light products. A refinery proposed a project to modify its FCCU to increase the conversion rate of heavier materials into gasoline without increasing the FCCU feed capacity. The refinery met with representatives from the state permitting agency, EPA enforcement and permit staff on permit issues related to potential emissions increases associated with the conversion project. The project would have increased gasoline and light product supply by approximately 1,500 barrels per day.

The FCCU is part of a flexible permit that has limits expressed only as a single cap for all of the sources in the permit. Specific source-by-source emissions limits do not exist. The refinery and agencies discussed how to determine the potential to emit for emissions from the FCCU. Several emissions calculation methods were reviewed with the agencies. Some calculation methods were determined to be incorrect and were disregarded. However, the calculation method that provided the best representation and understanding was considered too unconventional to accept.

Result:

The refinery withdrew the project because agreement could not be reached on how to conduct the emissions calculation for the proposed project, which meant that the permitting process could not proceed.

Impact:

Loss of additional 1,500 barrels per day gasoline and light product production.

## Example #5 – Impact on Routine Equipment Replacement Decision

Problem Description:

NSR regulations can often prevent increased production efficiencies enabled through routine maintenance, repair and replacement (RMRR) of equipment. Unfortunately, EPA currently defines RMRR so narrowly the exemption has been virtually eliminated.

For example, a distillation column is taken out of service for routine maintenance. The column has been in service for several years and the condition of the column's internals (trays, etc.) can only be fully assessed through visual inspection after draining and de-gassing the vessel. The maintenance inspection reveals that the internals must be replaced, but the manufacturer no longer produces the same style of trays. Tray design technology has improved over the years and the manufacture recommends a more efficient design that will enable gasoline production to increase by 1,500 BPD with only minor increases in actual emissions. Faced with increased costs from an extended shutdown and associated production losses, the operator elects to install the new trays and return the unit to production since there is no other feasible option.

Result:

Under current EPA interpretation, the "physical change" may not be considered RMRR and may require NSR permit review, even though the replacement equipment will allow increased production and energy efficiency.

Energy Impact:

Less gasoline production capability and less efficiency per gallon produced, pending permit issuance. Permitting costs, delays and uncertainty regarding what the requirements are.

## Example #6 – Maintenance (Detroit Edison 24 Factor Test)

Problem Description:

As the following examples show, it is difficult to see how refinery maintenance could be accomplished without triggering NSR/PSD review, when using the "Detroit Edison 24 factor test." All maintenance results in restoration of "lost capacity" (Factor #11) or "life extension" (Factor #15).

Result:

Needed maintenance is either not undertaken or delayed.

Energy Impact:

The facility is more likely to break down during times of high demand, with consequent fuel supply interruptions and perhaps other damage to the refinery.

**Example #6a – Maintenance (Detroit Edison 24 Factor Test)**

Problem Description:

The following types of changes are done at refineries all the time, but recent reinterpretations indicate EPA would not consider these changes to be RMRR. If a heat exchanger tube became plugged, maintenance would be performed to clear the blockage to restore capacity of the heat exchanger and potentially the entire unit; firebrick change out and even new coatings on refractory bricks would require PSD review because it would result in more efficient energy usage; piping changes to upgrade piping would also trigger NSR review.

Result:

Regular maintenance is either not undertaken or delayed.

Energy Impact:

Less efficient processes remain in place; reduced output; potential breakdowns.

**Example #6b – Maintenance, Gasoline Production (Detroit Edison 24 Factor Test)**

Problem Description:

Tubes in the depropanizer reboiler furnace failed, exposing flammable fluids to the furnace. The resulting fire ruined the remaining tubes and the unit was shutdown causing a loss of gasoline production at the plant. New tubes were installed and the unit was repaired and back in service in 2 weeks, limiting gasoline production problems. However, under EPA's Detroit Edison 24 factor test, the unit should have undergone PSD review before it could be repaired. Actual emissions from the last 2 years are > 40 tons/yr below the permitted limit; therefore, a PSD permit should have been required. Obtaining the permit would have taken an overall time of 5-18 months, meanwhile, gasoline supplies would have been limited until the permit was obtained and the depropanizer reboiler furnace could be put back into service.

Result:

Unit downtime of 5-18 months for PSD permit.

Energy Impact:

No gasoline production from the plant.

**Example #6c – Gasoline Production (Detroit Edison 24 Factor Test)**

Problem Description:

A new catalyst was put in the isomerization reformer during maintenance outage. The new catalyst lasts longer requiring less frequent outages and, hence, gasoline production is increased. Under the Detroit Edison 24 factor test, the catalyst change out would require a PSD review and, once again, due to use of the actual-to-potential emissions test, rather than a potential-to-potential emissions test, a PSD permit would be required to change the catalyst.

Result:

Unit downtime of 5-18 months for PSD permit.

Energy Impact:

Reduced gasoline production.

**Example #6d – Hypothetical Maintenance Example, Limiting Gasoline Production**

Problem Description:

If, during a scheduled outage, the tubes on the crude unit furnace were inspected and deemed to need to be replaced this would require a PSD permit application.

Result:

A significant portion of the crude unit would be shutdown for 5-18 months (or at least a large portion thereof) since PSD permit application processing take about that time on average.

Energy Impact:

Reduced gasoline output; less ability to meet demand.

**Example #6e – Hypothetical Maintenance Example, Limiting Gasoline Production**

Problem Description:

During construction of a new wet gas scrubber for the FCCU, incorrect materials were utilized for the piping, which subsequently corroded. The piping then needed to be replaced with improved metallurgy. Meeting the replacement-in-kind only requirement would require reinstalling the incorrect piping that was subject to corrosion. Replacing the piping with different piping with improved metallurgy would require NSR or PSD review and permit, since actual emissions when compared to potential emissions on a FCC are presumed to be > 40 tons/yr $NO_x$.

Result:

The FCCU would have to be shut down until the permit was obtained; 5-18 months average to get NSR/PSD permits. Gasoline production would be severely curtailed until the FCCU is back up.

Energy Impact:

Reduced gasoline output; reduce ability to meet consumer demand.

**Example #7 – Pump Replacement; Gasoline Production**

Problem Description:

The reformate reactor was limited by the charge pump. Replacing the pump with a larger pump allowed more gasoline blend stock to be produced and thereby more gasoline to be produced. Under some interpretations of PSD rules, the change of the pump could have been subject to PSD review since increased flow required running the heater at a higher rate. The actual-to-potential test would require a permit even though BACT (LDAR) is already installed on the pump, which is the only piece of equipment actually modified.

Result:

Despite the installation of BACT technology, additional production capacity would be delayed for PSD permit.

Energy Impact:

Delayed gasoline capacity increase.

**Unnecessary NSR Reviews Negatively Impact Refinery Efforts to Increase Electricity Production**

**Example #8 – Cogeneration Plant Modification to Increase Electricity Production:**

Problem Description:

A project was proposed to install an inlet air cooler on each of two existing 75-megawatt cogeneration units. The cooler air would have allowed increased electricity production during hot summer months totaling an additional 26,000 megawatt-hours per year.

A PSD permit was issued for the existing cogeneration units in the early 1990's and BACT for $NO_x$ was determined to be dry low $NO_x$ combustors. The actual tons per year $NO_x$ emissions from the existing cogeneration units were considerably lower than the permit allowable emissions because the combustors actually emitted less $NO_x$ than the vendor guarantee, which was used as the permit limit, and not because the units were operated at partial load.

The actual emissions increase of all pollutants above the permit limits from installing the inlet air cooler would have been below PSD significance thresholds. However, the permitting agency stated that PSD rules required comparison of actual past emissions to permit allowable emissions. As a result, the emissions increase was greater than PSD significance thresholds and the project required a PSD permit. A PSD permit would have required selective catalytic reduction for $NO_x$ as BACT – a requirement so expensive that the economics of the project were no longer justified. Other operational or regulatory solutions were proposed, but these were unacceptable for either the permitting agency or the refinery.

Result:

The refinery was penalized for the better than expected operation of the original low $NO_x$ combustors in calculating the emissions for the inlet air cooler project. When the cogeneration units operated at full load, the actual emissions were much less than the permit limits because the combustors generated less $NO_x$ than expected. However, for the inlet air cooler project, the refinery, in essence, had to re-permit the emissions allowed under the existing cogeneration permit resulting in additional controls being required. The costs of the additional controls (selective catalytic reduction) caused the project to be economically unacceptable and the project was cancelled.

Energy Impact:

Loss of additional 26,000 megawatt-hours per year of electricity production.

**Unnecessary NSR Reviews Negatively Impact Refinery Energy Efficiency and Pollution Prevention**

**Example #9 – Low $NO_x$ Burners; Energy Efficiency**

Problem Description:

Burners were recently changed out in the crude unit furnace as a payout project. The payout was based upon a new type of low $NO_x$ high efficiency burner utilizing less fuel to maintain the same heat load. Under some versions of EPA's interpretations, the project would have been subject to PSD review, since the burners were not exactly the same as the ones taken out. Review would have likely shown the crude units' actual emissions versus permitted emissions were > 40 tons difference. Therefore, a PSD permit would have been required for this project although the project resulted in reduced emissions, saved energy and improved efficiency. It was determined that the new type burners could not be installed without the substantial delay of NSR permitting.

Result:

Lost opportunity to lower $NO_x$ emissions and achieve greater efficiency.

Energy Impact:

Delay and reduced fuel supply.

## Unnecessary NSR Reviews Impede Clean Fuels Supply and Pollution Prevention

### Example # 10 – Refinery Modifications To Produce Clean Gasoline; Delayed Environmental Benefits

Problem Description:

A major refinery was on a tight schedule to begin modifications to enable the production of federal reformulated gasoline and California Phase 2 reformulated gasoline. The first project would reduce total air pollutant emissions from the refinery, both on an overall mass basis and on a pollutant-by-pollutant basis, by increasing the efficiency of certain operations, removing older process units from service, and installing state-of-the-art emission controls. These reductions, coupled with reduced automobile emissions from reformulated gasoline, would improve air quality in the nonattainment area substantially.

Agency delays in the environmental review process jeopardized the refinery's ability to meet regulatory deadlines for producing the reformulated gasoline. The local permitting agency reviewed and authorized site preparation and other activities the refinery undertook prior to actually receiving its NSR permit under the agency's SIP-approved permit rule and established agency guidance. EPA interpreted the local agency's rule differently than the local agency and issued a § 114 request followed by a notice of violation and a "stop work" order. The refinery obtained an extraordinary stay of EPA's administrative order from the U.S. Court of Appeals and proceeded to complete the project just in time, despite continued EPA threats to file a civil action for penalties.

Result:

The facility received and settled the NOV; a "stop work" order was issued and the facility ultimately obtained relief in the courts allowing the modifications to proceed. EPA "overfilling" and involvement in individual permit issues creates an atmosphere of uncertainty for all projects and for state/local permit agencies.

Energy Impact:

Court action enabled adequate supplies of clean gasoline to reach areas where required by federal and state regulations, despite EPA efforts to stop the facility changes.

### Example #11 – Uncertainty in Calculating Emissions Delays Permit Approvals, Increased Production and Clean Fuel Projects

Problem Description:

The current uncertainty in calculating emissions associated with a project may lengthen the permit application review and approval process and delay an increase in fuel production and the availability of clean fuels.

A refinery submits permit applications for two unrelated projects. In one case, the refinery plans to expand the crude unit resulting in an increase in fuel production. In the other case, the project allows the refinery to comply with the low sulfur gasoline requirements. In both cases, there is uncertainty in how to calculate the post-project emissions. Neither the refinery nor the state, nor the state and EPA agree on how to calculate the post-project emissions. In the past, the state was comfortable completing emission calculations. Now, however, the state is not comfortable calculating emissions and requested, in two separate requests, that EPA provide input on how to calculate the post-project emissions.

These cases highlight the fact that the NSR rule is very complex and that few stakeholders (industry or permitting agencies) thoroughly understand or can agree on it. Even though States have authority or have been delegated the authority to implement the rule, states are increasingly requesting determinations from EPA. These requests prolong the permitting process and delay project approval.

Result:

In the crude unit expansion project, the permit was approved; however, obtaining input from EPA added three months to the permit review process. In the low sulfur gasoline project, a determination has not yet been received from EPA.

Energy Impact:

Delayed increases in production capacity and low sulfur fuel.

## III. NEW SOURCE REVIEW REFORM – SOLUTIONS

### A. Overview

The current NSR and PSD requirements adequately ensure that newly constructed facilities have up-to-date and appropriate emission controls installed. For existing facilities, however, evolving EPA guidance on current NSR and PSD regulations create uncertainties for operators and impede facility modifications required to meet the nation's energy needs. Therefore, clarifying and reforming the NSR/PSD requirements so that operators can comply with them is essential. Changes in the NSR/PSD program should result in regulations which:

- Provide for clean air and protect the environment;
- Conform to the authorizing statute and the intent of Congress;
- Provide the refining industry the flexibility necessary to modify existing facilities to meet new fuel requirements;
- Provide incentives for technological innovation, which often lead to increased efficiency and improved environmental performance;
- Clarify the types of changes that are subject to NSR;
- Maximize certainty of applicability and provide a uniform and timely implementation process; and
- Are written clearly and are easily understood by all stakeholders.

The following actions will improve the NSR/PSD program and allow our objectives to be met:

1. Clarify regulatory applicability provisions in the base program, including the following:

    a) Define the routine maintenance, repair and replacement exemption
    b) Employ a reasonable and equitable emissions increase test
    c) Apply a practical definition of project aggregation
    d) Allow technological innovations that improve efficiency and environmental performance to be exempt from NSR/PSD.

2. Institute flexible mechanisms, such as plant-wide applicability limits (PALs) and cap-and-trade programs as voluntary alternatives to the base program.

3. Develop a process for prompt, reasonable permit review.

## B. NSR Program Solutions

API strongly recommends the following changes be made to the NSR program.

### 1. Clarify Regulatory Applicability Provisions in the Base Program

a) Define the Routine Maintenance, Repair, and Replacement (RMRR) Exemption

The term "routine maintenance, repair and replacement" should be defined in the regulations. A clear definition recognizing the integral nature and extent of RMRR to industry operations is essential. In general, regular maintenance work, regardless of its frequency, should qualify as RMRR. Projects undertaken at major turnarounds and on other maintenance cycles should also qualify. The one exception is when the project's purpose is specifically to extend the life of an existing emission unit beyond its normal useful life. Maintenance, repairs and replacements at a facility, including ones that incorporate changes in materials, design or increase efficiency, should be considered RMRR if they are of the type that have been, or will be, normally undertaken at similar sources within the relevant industrial source category.

The Report produced by the 90-day review should announce the Agency's intent to propose a rule clarifying the RMRR exemption. The Report should also announce the immediate withdrawal of the Detroit Edison applicability decision issued last year.

b) Use a Potential-to-Potential Emissions Applicability Test to Measure Emissions Increases

When a project results in a physical change or a change in the method of operation and is not exempt because of the RMRR exemption, then only those projects with expected potential emission increases in excess of the appropriate threshold should undergo permitting. The most equitable test to use is a potential-to-potential test. To determine if there will be a qualifying emissions increase, a comparison of the permitted or otherwise pre-project allowable emissions should be compared against the planned post-project allowable emissions. If the increase is less than the appropriate threshold, no permit should be required.

The Report produced by the 90-day review should announce the Agency's intent to propose a workable mechanism for evaluating new projects or major modifications that are subject to NSR. The evaluation mechanism should be based on a reconstruction test similar to that used in the current NSPS program and an emission test that is based on comparing the pre-project potential emissions rate to the post-project potential emissions rate.

c) Apply a Practical Definition of Project Aggregation

Return to a practical definition and implementation of project aggregation where projects clearly unrelated in function, time and effect are not considered as one project.

The Report produced by the 90-day review should announce the Agency's intent to propose a rule clarifying this aspect.

d) Provide Incentives for Technological Innovation

The NSR program should recognize and promote technological innovation that leads to better utilization of raw materials and decreased emissions. Technological innovation in the refining industry has allowed for continuous improvement in the efficiency of refinery facilities. This improved efficiency has raised product output and decreased emissions on a normalized basis. Improved efficiency ultimately minimizes the use of raw materials and the production of byproducts, including those emitted to the atmosphere, when calculated on a production rate (i.e. fuel) basis. Improved efficiency encompasses:

- Technology improvements in the management of the process, the maintenance of the process, the control of emissions, as well as
- Technology changes related to process (including emission) controls and raw material utilization.

Process optimization is the purpose of process engineering. Because process optimization leads to decreases in emissions, technology improvements and changes should be promoted and not hindered by the NSR process. This includes technology changes promoted by the regulatory agencies to improve or change the product specifications. At present, decreases in actual emissions, whether brought about by regulation or technological innovation, are not exempt from NSR review and with the improvements in monitoring equipment, can actually trigger NSR review. Decreases in actual emissions should be considered and exempted from permitting, even when the permitted values remain constant.

Finally, energy efficiency must be promoted. The current program as interpreted in the current enforcement effort promotes the maximum use of energy to ensure that actual emissions will approach permitted values. This should be changed to promote the most efficient use of energy as well as raw materials within the refining operation. The Report produced by the 90-day review should announce the Agency's intent to propose a rule clarifying this aspect.

The NSR program has created problems for much of American business, and solutions have been identified which encourage energy efficiency for all industry sectors. EPA is encouraged to adopt mechanisms that maintain and improve air quality while

aiding industry in saving energy. Specifically, the following two proposals benefit both the environment and industry:

- Exemption for Energy Efficiency Improvements. The Report produced by the 90-day review should announce the intent to propose a new exemption for projects that increase energy efficiency. Efficient use of energy reduces the burning of fuels and, thus, pollution. Energy projects that reduce the consumption of fuels or raw materials in the combustion or manufacturing process should be exempted from NSR review. To implement this exemption, EPA should develop clear measures of energy efficiency.

- Expand the Exclusion from NSR for "Pollution Control/Switch to Clean Fuels" to Other Industries, in Addition to Utilities. The Report produced by the 90-day review should announce the intent to propose an expanded exclusion for pollution control projects that includes any project resulting in a net reduction of emissions or in a source switching to cleaner burning fuels. The exclusion should weigh the total reduction in emissions of various pollutants against any potential increases.

**2. Institute Flexible Mechanisms as Voluntary Alternatives to the NSR Base Program**

While reforms to the base NSR program must first be made, API also encourages EPA to work with industry to evaluate and develop voluntary flexible mechanisms or approaches to the base NSR program. Flexible mechanisms can protect the environment, while providing regulatory streamlining to facilitate the rapid changes necessary in petroleum refineries. These changes are needed to meet both the increasing national energy demands and to produce the new cleaner fuels, such as low sulfur gasoline and diesel.

Flexible mechanisms API would like to pursue with EPA include PALs and market based alternatives (emission trading). We support the consideration of voluntary options to the base NSR program, which, in the case of a PAL, allow facility changes that do not exceed an established facility emission limit. A market-based alternative, such as a cap-and-trade program, to protect and, when needed, enhance air quality could provide for emission control that is more cost-effective and focused on environmental impacts. These same flexible mechanisms can limit or reduce emissions while providing for improved energy efficiency. Facility operators can meet environmental requirements as they respond to necessary facility maintenance and upgrades in the most cost-effective manner. By setting facility and area-wide emission caps with appropriate monitoring mechanisms, facility operators, regulators and the public can be sure that facilities are operating within their permitted limits and contributing to any applicable emission reduction goals.

While exploring these options has promise, there are clearly many issues to resolve as to the details and administration of any national PAL and/or market based alternative. API member companies have obtained PSD permits through the Texas Flexible Permit program, and that experience has demonstrated to us the value of flexible mechanisms. Those experiences, and others, have provided us with an understanding as to the time and commitment necessary to see even a limited flexible mechanism to completion. Our member companies have also reviewed the PAL included in a recent NSR consent degree.

Regarding PALs, the question was asked in the June 28 meeting, whether API members could support a declining cap in PALs generally, such as the one agreed to in the Marathon Ashland Petroleum consent decree. PALs are set on a case-by-case basis in a number of different circumstances. As indicated in our discussion of emission reductions, the industry continues to provide more fuel, while lowering emissions. When an individual PAL is established it might include a declining emissions baseline due to already planned emission reductions; however, this declining baseline should not be considered a characteristic of a PAL.

The purpose of a PAL is to allow a plant to operate efficiently and optimally within its permit limits, without having to undergo the time-consuming process of determining NSR applicability for every change in operations or physical change to the plant. As API noted in its comments on the 1996 NSR proposed rule, PAL limits should only be lowered when a new state or federal rule is developed that requires lowering of emissions at the same source covered by a PAL (in which case the source with the PAL should be able to achieve required reductions in whatever manner it deems appropriate) and when monitoring or modeling clearly shows the source with the PAL to be the cause of a violation of a National Ambient Air Quality Standard ("NAAQS") or PSD increment.

### 3. Develop a Process for Prompt, Reasonable Permit Review

Federal land managers (FLMs) have an affirmative responsibility under the Clean Air Act to protect the air quality related values for Class I areas potentially impacted by the source undergoing NSR/PSD review. Prior NSR/PSD reform proposals included provisions significantly increasing the ability of FLMs to delay permit approvals without demonstrating clean air quality impacts. FLMs should be brought into the permitting process early to address any issues they may have. Any NSR/PSD reform package should incorporate reasonable procedures for FLMs to carry out their responsibilities without unnecessarily delaying permit review. Reasonable, yet prompt, timelines should be required for FLM review, comment and issuance or denial of NSR/PSD permits.

API supports President Bush's Executive Order 13212, "Actions to Expedite Energy-Related Projects". The principal thrust of the directive was for all executive agencies "to expedite projects that will increase the production, transmission, or conservation of energy." More specifically, the President directed "[f]or energy related projects, agencies shall expedite their review of permits or take other actions as necessary

to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections." API stands ready to work with the Agency and other stakeholders to achieve this result.

# IV. Regulations, Other Than NSR, Requiring Air Emission Controls at Petroleum Refineries

## A. Overview

The NSR program is only one of over 50 federal regulations that require controls on air emissions from refineries. In addition, states and local air districts regulate refinery emissions. Typically, several regulations apply to any one emissions source and a source may be required to install more than one type of emissions control. The NSR/PSD program was intended to impose requirements only on new facilities or modifications of existing facilities that resulted in significant new emissions. By way of illustration, a list of federal regulations and of state regulations (Texas) applicable to refineries follows.

## B. Regulatory Programs, Other than NSR, that Require Refinery Emission Controls/Limits

EPA has promulgated 26 regulations under the New Source Performance Standards (NSPS) program that require emission controls of criteria pollutants and their precursors from refinery equipment.[5] The NSPS regulations specify emission limits, rather than control technologies, for refinery equipment installed after a specified date.

In addition, EPA has promulgated 20 regulations under the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) program that require emission controls for hazardous air pollutants (HAPs) at refineries. Twelve of these regulations require maximum achievable control technology (MACT) or an equivalent emission performance standard. One of these regulations ("Refinery MACT I") requires MACT controls at most processing units at refineries. Later this year, EPA is scheduled to promulgate the "Refinery MACT II" regulation, which will require MACT controls for the remaining refinery process units (MACT-UUU). Many other NESHAP regulations require controls on ancillary refinery equipment as well (e.g., storage vessels, waste operations, equipment leaks, cooling towers, and truck loading). EPA plans to promulgate more NESHAP regulations that will affect refineries in the future (e.g., combustion equipment, site remediation, and organic liquids).

EPA is currently evaluating the residual health risk remaining after these MACT controls are in-place, and will promulgate regulations requiring additional controls, if the Agency determines that such standards are necessary to protect the public health from the risk remaining.

States that do not meet, or previously did not meet, the National Ambient Air Quality Standards (NAAQS) for criteria pollutants must develop state implementation plans (SIPs) to attain and maintain compliance with the NAAQS and with EPA's

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[5] The criteria pollutants are: sulfur oxides (sulfur dioxide), particulate matter ($PM_{10}$ and $PM_{2.5}$), carbon monoxide, ozone, nitrogen dioxide and lead.)

regional haze regulations. States promulgate regulations for emission controls or limits to reduce criteria pollutants and their precursors from both mobile and stationary sources (including refineries) to meet SIP requirements. EPA has promulgated 7 control technology guidelines applicable to refinery equipment, which states may incorporate into their SIPs.

In addition, EPA's solid and hazardous waste management regulations under the Resource Conservation and Recovery Act (RCRA) also include requirements for reducing air emissions (e.g., for process vents, equipment leaks) for units managing hazardous wastes, including surface impoundments, tanks and containers. (40 CFR Part 264, Subparts AA – CC; Part 265, Subparts AA – CC.) These may apply to refineries.

## Federal Regulations Requiring Emission Controls at Refineries

**40 CFR 52 Approval and Promulgation of State Implementation Plans for NAAQS**

- 52.21 Prevention of Significant Deterioration (PSD) for Attainment Areas
- 52.24 New Source Review for Nonattainment Areas

**40 CFR 60 New Source Performance Standards (NSPS)**

- NSPS-A General Provisions
- NSPS-Cd Sulfuric Acid Production Units
- NSPS-D, Da, Db, Dc Boilers
- NSPS-G Nitric Acid Plants
- NSPS-H Standards of Performance for Sulfuric Acid Plants
- NSPS-I Standards of Performance for Hot Mix Asphalt Facilities
- NSPS-J Petroleum Refineries
- NSPS-K, Ka, Kb Storage Vessels of Petroleum or Volatile Organic Liquids
- NSPS-GG Stationary Gas Turbines
- NSPS-UU Asphalt Processing
- NSPS-VV Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry (SOCMI)
- NSPS-XX Bulk Gasoline Terminals
- NSPS-DDD Volatile Organic Compound (VOC) Emissions from Polymer Manufacturing Industry
- NSPS-GGG Equipment Leaks of VOC in Petroleum Refineries
- NSPS-III Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes
- NSPS-KKK Equipment Leaks of VOC from Onshore Natural Gas Processing Plants
- NSPS-LLL $SO_2$ Emissions from Onshore Natural Gas Processing Plants
- NSPS-NNN Synthetic Organic Chemical Manufacturing Industry Distillation Operations
- NSPS-QQQ Volatile Organic Compound Emissions from Petroleum Refinery Wastewater Systems
- NSPS-RRR Synthetic Organic Chemical Manufacturing Industry Reactor Processes
- NSPS-CCCC Solid Waste Incinerators

**40 CFR 61 National Emission Standards for Hazardous Air Pollutants (NESHAPs)**

- NESHAPS-A General Provisions
- NESHAPS-E Mercury
- NESHAPS-J Equipment Leaks (Fugitive Emission Sources) of Benzene
- NESHAPS-M Asbestos
- NESHAPS-V Equipment Leaks (Fugitive Emission Sources)
- NESHAPS-Y Benzene Emissions from Benzene Storage Vessels
- NESHAPS-BB Benzene Transfer Operations
- NESHAPS-FF Benzene Waste Operations

**40 CFR 63 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories**

- MACT-A General Provisions
- MACT-B Control Technology Determinations for Major Sources
- MACT-F Process Vents, Storage Vessels, Transfer Operations, and Wastewater
- MACT-G Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
- MACT-H Equipment Leaks
- MACT-I Certain Processes Subject to the Negotiated Regulation for Equipment Leaks
- MACT-Q Industrial Process Cooling Towers
- MACT-R Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)
- MACT-T Halogenated Solvent Cleaning
- MACT-Y Marine Vessel Tank Loading Operations
- MACT-CC Petroleum Refineries
- MACT-DD Off-Site Waste and Recovery Operations

## Federal Regulations Requiring States to Regulate Emissions at Refineries

- State Implementation Plan (SIP) Requirements for Meeting NAAQS
- State Operating Permit Programs
- Regional Haze Rule
- Stratospheric Ozone Regulations
- Acid Rain Provisions
- Nitrogen Oxides Emission Reduction Program
- Control Technology Guidelines (guidance for emission controls, which states may incorporate into their regulations)
- Petroleum Liquid Storage (2 regulations)
- Equipment Leaks
- Vacuum Producing Systems, Wastewater Separation and Process Unit Turnarounds
- Air Oxidation Processes
- Distillation Operations and Reactor Processes
- Tank Truck Gasoline Loading Terminals

## Upcoming Federal Regulations Requiring Emission Controls at Refineries

- Refinery MACT II (NESHAP)
- Refinery Residual Risk
- NESHAP for Combustion Turbines
- NESHAP for Industrial Boilers
- NESHAP for Process Heaters
- NESHAP for Reciprocating Internal Combustion Engines
- NESHAP for Site Remediation
- NESHAP for Organic Liquid Distribution
- Residual Risk for NESHAP source categories

## State (Texas) Regulations Requiring Emission Controls at Refineries

- 30 TAC 101 General Rules
- 30 TAC 106 Permits by Rule
- 30 TAC 111 Control of Air Pollution from Visible Emissions and Particulate Matter
- 30 TAC 112 Sulfur Compounds
- 30 TAC 113 Hazardous Air Pollutants
- 30 TAC 115 Control of Air Pollution from Volatile Organic Compounds

- VOC storage tank control device requirements, inspections, records [30 TAC 115.112, 115.114, 115.116]
- Process vent gas control requirements [30 TAC 115.121, 115.122, 115.126]
- Water separator control requirements [30 TAC 115.131, 115.132, 115.136]
- VOC Emissions Limit for gasoline transfers and VOC loading operations at other than gasoline terminals, gasoline bulk plants, and marine terminals [30 TAC 115.211]
- Operation of vapor recovery system for gasoline transfers [30 TAC 115.212]
- Land-based VOC transfer operations leak testing and records [30 TAC 115.214]
- Loading Operations CEM requirements for Direct-flame incinerator, a carbon adsorption system, a chiller or catalytic incinerator to control VOC emissions from a vacuum-producing system [30 TAC 115.216]
- Control of Vent Gas Streams and Procedures to recover and store all pumpable or drainable liquids at shutdowns/turnarounds and procedures to reduce vessel gas pressure to 5 psig or less by recovery or combustion before venting to the atmosphere [30 TAC 115.312]
- Process Unit turnaround records and CEM requirements for direct-flame incinerator, carbon adsorption system, chiller or catalytic incinerator to control VOC emissions from a vacuum-producing system [30 TAC 115.316]
- Fugitive Emission Control Conduct Monitoring and Records [30 TAC 115.324-115.326]
- Wastewater VOC component standards, operation and records [30 TAC 115.142]
- Wastewater control components monitoring and CEM requirements [30 TAC 115.136, 115.143 - 115.144]
- Leak Monitoring Requirements [30 TAC 115.354, 115.356]

- 30 TAC 116 New Construction/Modification
- 30 TAC 117 Control of Air Pollution from Nitrogen Compounds
- 30 TAC 118 Control of Air Pollution Episodes
- 30 TAC 122 Federal Operating Permits